

FIG. 1 Prior Art

The diagram illustrates a network protocol stack with three layers, numbered 1 to 3 from bottom to top. The layers are:

- 3 Network layer** (Reference 10): Contains **CONNECTION VARIABLES** and **CONNECTION LOGIC**.
- 2 DATALINK LAYER** (Reference 20): Contains **EDC LOGIC**, **EDC VARIABLES**, and **LINK CONTROL**.
- 1 Physical layer** (Reference 30): Contains **BITS**.

Data flow is indicated by arrows:

- OUTGOING NETWORK FRAMES** (labeled **NF**) flow from the Network layer to the Datalink layer.
- INCOMING NETWORK FRAMES** (labeled **NF**) flow from the Datalink layer to the Network layer.
- OUTGOING DATA FRAMES** (labeled **FRAME**) flow from the Datalink layer to the Physical layer.
- INCOMING DATA FRAMES** (labeled **FRAME**) flow from the Physical layer to the Datalink layer.

A horizontal arrow labeled **BITS** connects the Physical layers of the two stacks, indicating the physical transmission medium.

Flh. 2 PRIOR ACT

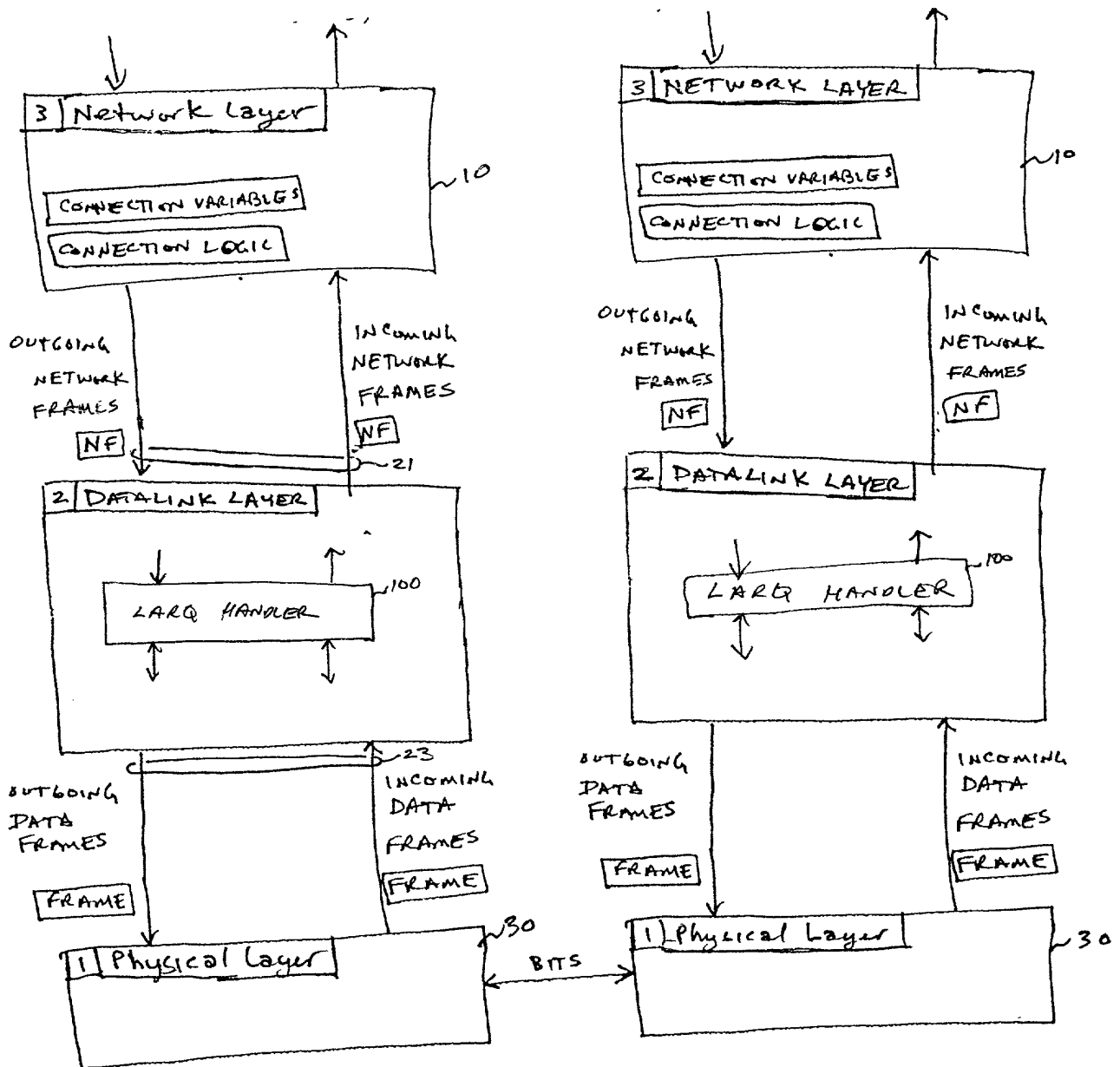


FIG. 3

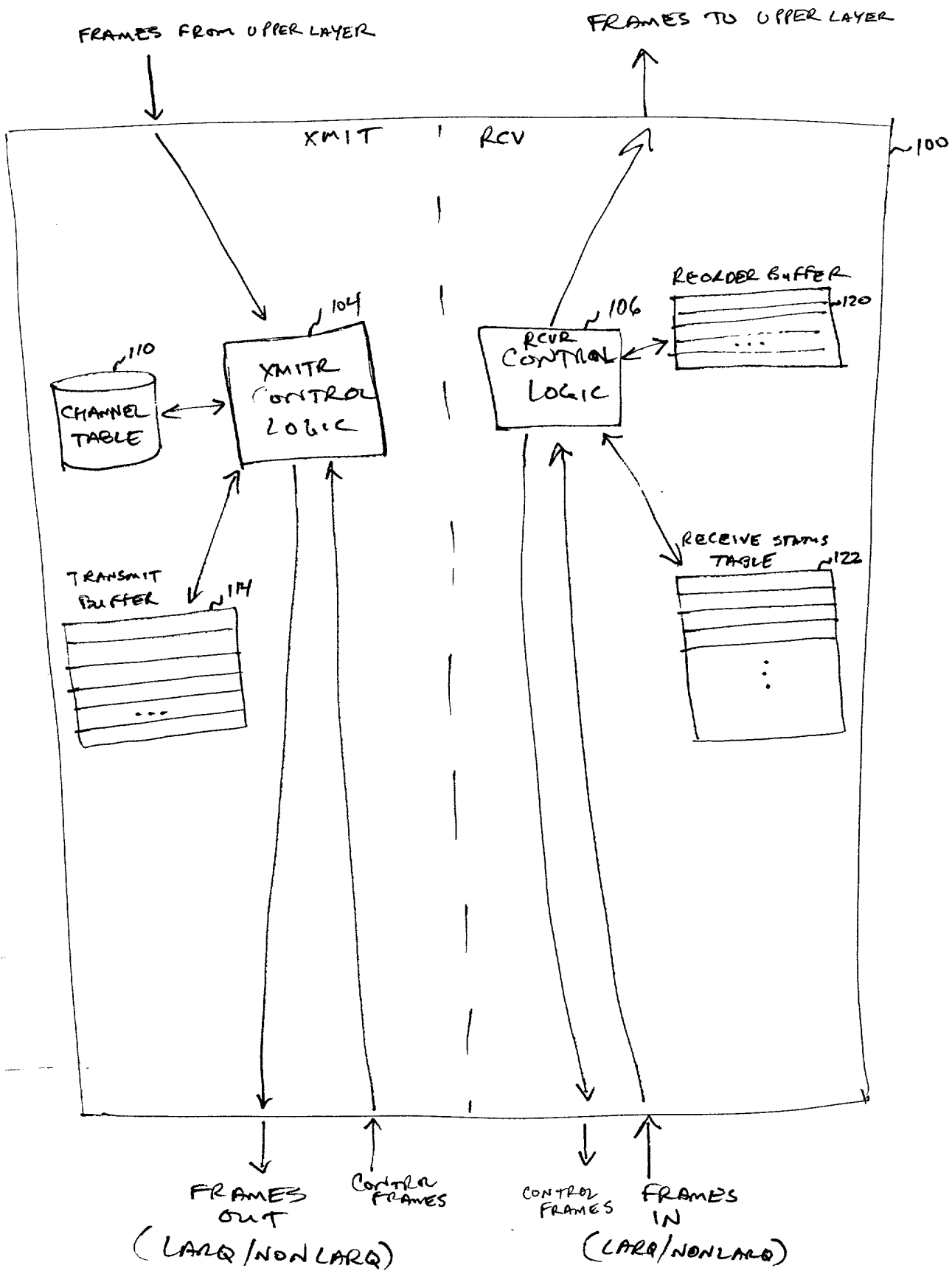


FIG. 4

6 bytes	6 bytes	2 bytes	0-1500 bytes	4 bytes
Destination MAC Address	Source MAC Address	Type/Length	Ethernet Payload	FCS (CRC-32)

FIG. 5 (PRIOR ART)

6 bytes	6 bytes	8 bytes	2 bytes	0-1500 bytes [or less if physical layer cannot support extra bytes]	4 bytes
Destination MAC Address	Source MAC Address	LARQ Header	Type/Length	Ethernet Payload	FCS (CRC-32)

Ethertype	Subtype	Len	LARQ Ver.	Rsv	Nack	Ctl	Pri	Rsv	Seq #
0x886c	0x10	xxxx xxxx	xxxx xxxx	0	xxx	0	xxx	0x00	xxxx xxxx
16 bits	8 bits	8 bits	8 bits	1 bit	3 bits	1 bit	3 bits	8 bits	8 bits

FIG. 6

6 bytes	6 bytes	8 bytes	0-?? bytes
Destination MAC Address	Source MAC Address	LARQ Header	Pad to minimum size if needed

Ethertype	Subtype	Len	LARQ Ver.	Rsv	Nack	Ctl	Pri	Rsv	Seq #
...	...	...	...	...	000	1	xxx	...	xxxx xxxx

FIG. 7

6 bytes	6 bytes	6 bytes	6 bytes	6 bytes
Destination MAC Address	Source MAC Address	LARQ Header	Nack Extension	Pad to minimum size if needed (0-38 bytes)

Ethertype	Subtype	Len	LARQ Ver.	Rsv	Nack	Ctl	Pri	Rsv	Seq #
...	...	...	...	...	xxx	1	xxx	...	xxxx xxxx

FIG. 8

**CHANNEL STATE INFORMATION TABLE**

SenderID	DestinationID	Pri	Channel Type	Cur Seq	Oldest Seq	Frame Table	...
2.0.7.0.0.3	ff.ff.ff.ff.ff	1	SENDER	34	34		
2.0.7.0.0.3	3.0.4.0.3a.77	1	SENDER	131	120		
3.0.4.0.3a.77	2.0.7.0.0.3	1	RECEIVER	78	78		
...							

**FIG. 9(a)****SENDER FRAME STATE TABLE**

Seq #	Frame Pointer	Send Time	Retransmit Time
17	xxx	10:23:27:222	--
18	xxx	10:23:27:223	--
19	xxx	10:23:27:240	10:23:27:250
20	xxx	10:23:27:245	
21	xxx	10:23:27:258	
...			

**FIG. 9(b)****RECEIVER FRAME STATE TABLE**

Seq #	Frame Pointer	Miss Time	Nack Req Time	Receive Time
17	xxx	--		10:23:27:223
18	xxx	--		10:23:27:223
19	xxx	10:23:27:245	10:23:27:45	10:23:27:251
20	xxx	--		10:23:27:245
21	xxx	--		10:23:27:259
...				

**FIG. 9(c)**

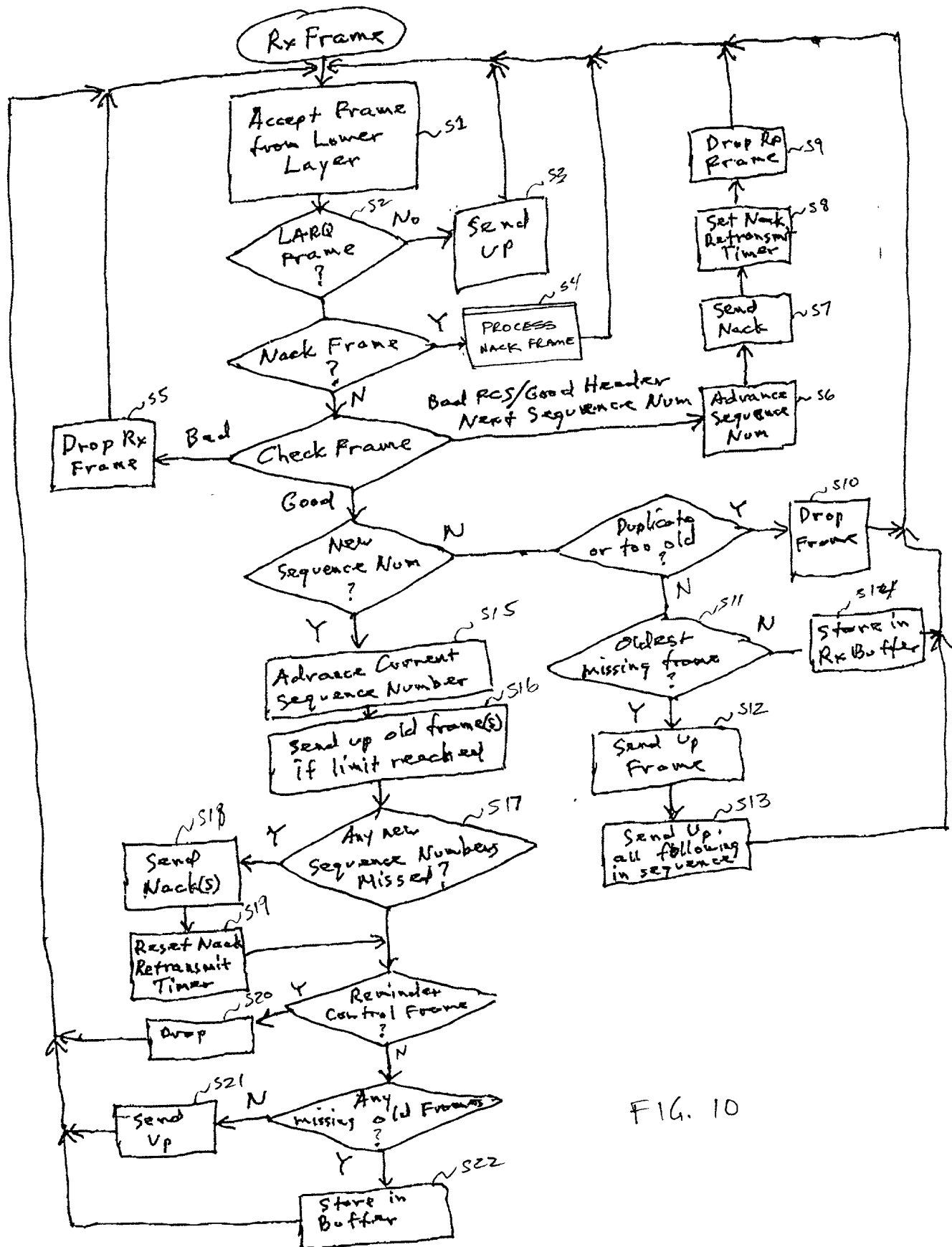


FIG. 10

100160-585660

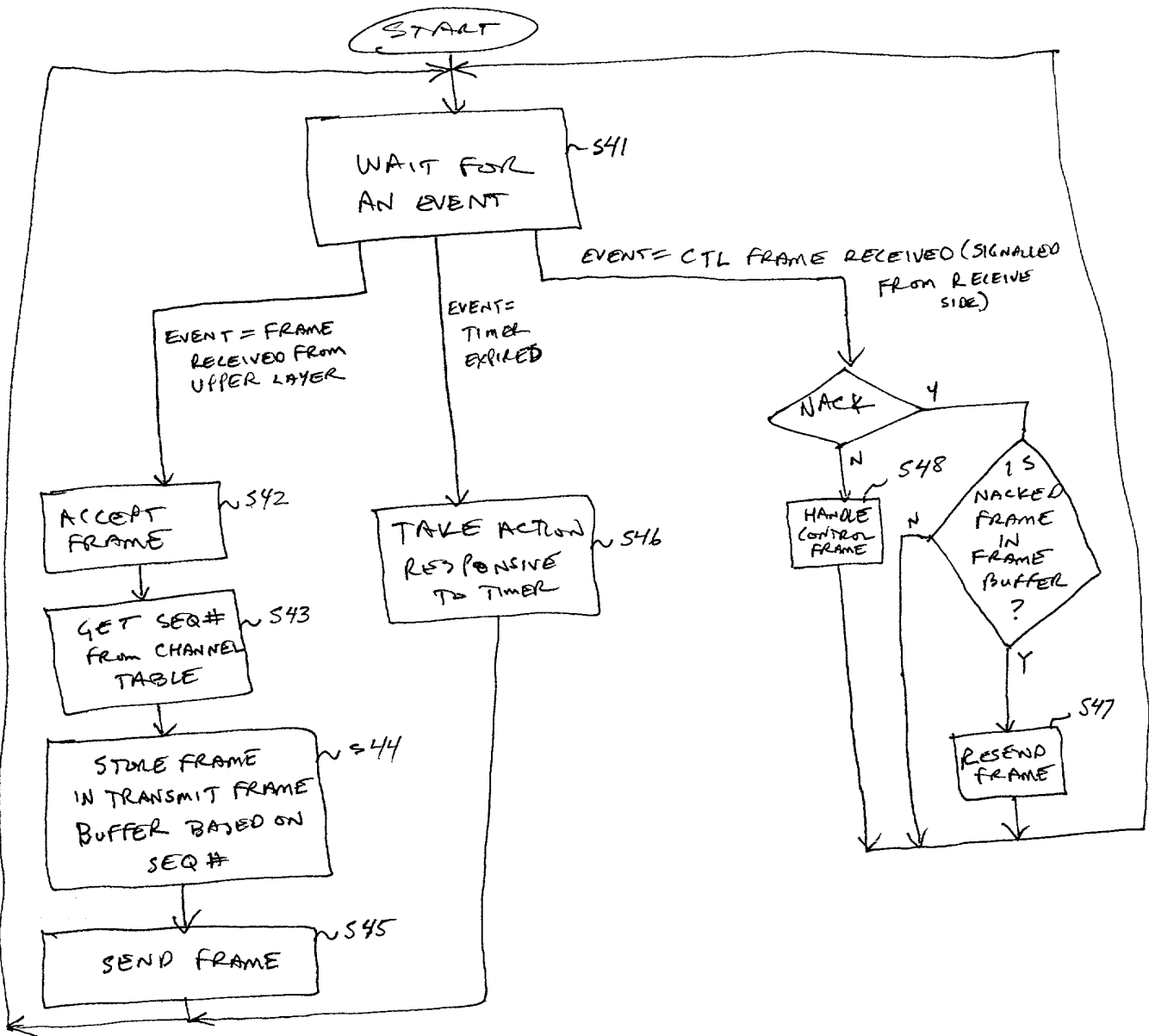
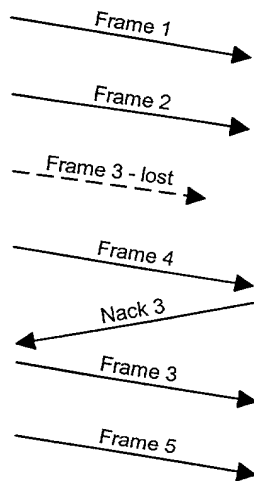


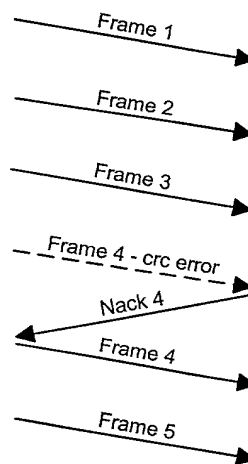
FIG. 11

Sender Receiver



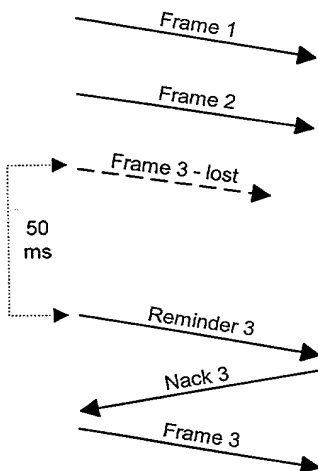
Basic lost frame.

Sender Receiver



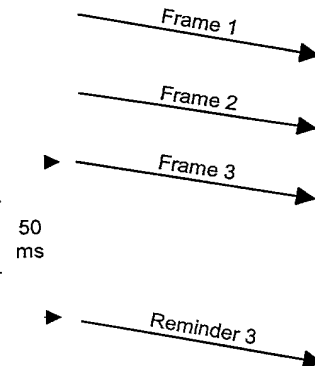
Errored frame

Sender Receiver



Trailing lost frame plus reminder

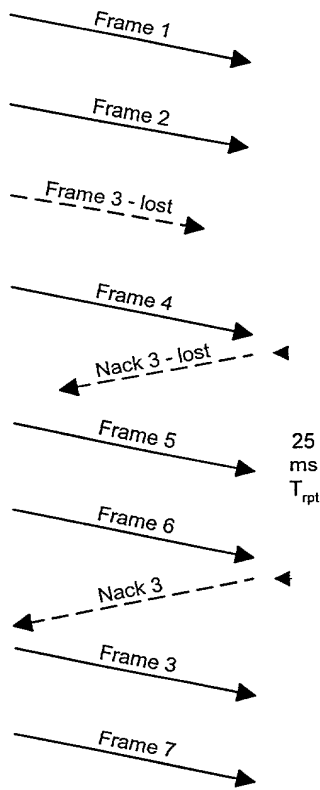
Sender Receiver



Normal last frame plus reminder

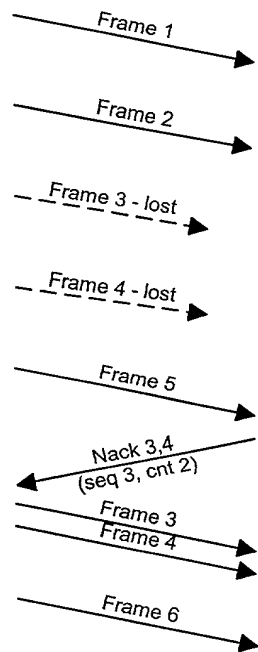
FIG. 12

Sender Receiver



Lost frame plus lost nack

Sender Receiver



Multiple lost frames

FIG. 13

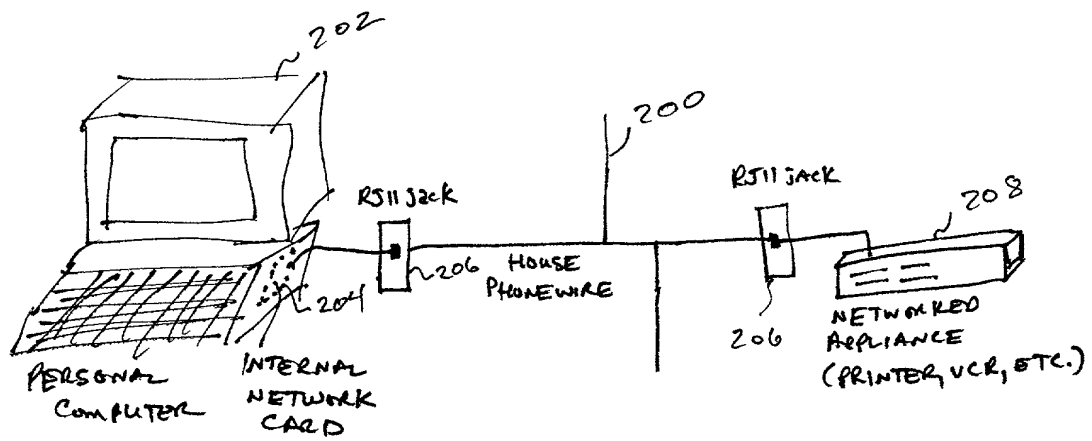


FIG. 14